

REMARKS

This document is submitted in response to the final Office Action dated October 24, 2006, and the Advisory Action dated February 15, 2007.

Claims 1, 3-6, and 8-10 were rejected in the final Office Action as obvious over the primary reference Cole, US Patent 4,320,151 ("Cole"), in view of four secondary references, including Boinot et al., US Patent 2,529,131 ("Boinot"); and Heikkila et al., US Patent 5,730,877 ("Heikkila").

Claim 1, the only independent claim, covers a composition containing a thermolabile protein mixed with a **liquor waste**.

In the final Office Action, the Examiner alleged that it would have been obvious for a skilled person in the art to combine Cole, which teaches mixing a thermolabile protein with a sugar solution to protect the protein, with the four secondary references, all of which teach that vinasse, **a liquor waste**, contains sugar, to arrive at the composition of claim 1.

In response, Applicants pointed out that, according to Cole, to protect a thermolabile protein with a sugar solution, the sugar concentration must reach 20%. They further pointed out that, based on all of the four secondary references, vinasse contains <20% sugar. Based on these two facts, a skilled person in the art would have concluded that vinasse, a liquor waste containing <20% sugar, is not a suitable sugar solution to protect a thermolabile protein. In other words, he or she would not have been motivated to combine Cole with any of the four secondary references to arrive at the composition of claim 1, i.e., a composition containing a thermolabile protein and a liquor waste, e.g., vinasse.

In the Advisory Action, the Examiner does not dispute the two facts mentioned above. However, he argues that a liquor waste can contain more than 20% sugar based on two grounds. See the Advisory Action, page 2. Applicants traverse both separately below.

First, the Examiner contends that after obtaining a sucrose-rich fraction by fractionating a liquor waste (i.e., vinasse) as taught in Heikkila, "it would have been

obvious to concentrate ... the fraction sufficiently to obtain at least 20% sugar ...” See the Advisory Action, page 2.

Applicants would like to point out that a liquor waste, e.g., vinasse, is the residuum left in a still after the process of distillation. See Exhibit 1. The specification provides an example of a liquor waste, i.e., a sorghum liquor waste, which is the remains after two distillations of fermented sorghum. See page 3, lines 1-5. Therefore, a person of ordinary skill in the art would readily understand that any solution obtained by processing the residuum obtained after distillation, i.e., a liquor waste, is no longer a liquor waste. The sucrose-rich fraction taught in Heikkila is obtained by fractionating a liquor waste via chromatography (see the Abstract), by which different substances are collected in different fractions. A skilled artisan would know that this sucrose-rich fraction is not a liquor waste. Thus, mixing it with a thermolabile protein would not have arrived at the composition of claim 1, which contains a liquor waste.

Second, pointing out that “Boinot et al. discloses converting unfermentable sugar of vinasse to fermentable sugar,” the Examiner asserts that “after converting unfermentable sugar to fermentable sugar ..., it would have been obvious to concentrate the vinasse ... to obtain at least 20% sugar ...” See the Advisory Action, page 2.

Apparently, the Examiner believes that converting unfermentable sugar in a liquor waste to fermentable sugar would increase the overall sugar content in the liquor waste. This is incorrect. As unfermentable sugar and fermentable sugar are merely different types of sugar, converting the former to the latter only changes the types of sugar contained in the liquor waste, not its overall sugar concentration. Further, the solution obtained from this converting process is no longer a liquor waste, which, as pointed out above, is the residuum left in a still after distillation. It follows that mixing this solution with a thermolabile protein would not have arrived at the composition of claim 1, which contains a liquor waste.

Taken together, neither Heikkila nor Boinot discloses that a liquor waste per se contains more than 20% sugar, as asserted by the Examiner. Nor does any of the other references cited by the Examiner. See Remarks in Applicants’ response dated January

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24, 2007. Applicants thus submit that a skilled person would not have been motivated to combine the primary reference Cole, which teaches that 20% is the minimum sugar concentration required for protecting thermolabile proteins, with any of the four secondary references, all of which teach that a liquor waste contains < 20% sugar.

It is respectfully requested that the Examiner withdraw this rejection.

Conclusion


It is believed that all of the pending claims have been addressed. However, the absence of a reply to a specific rejection, issue or comment does not signify agreement with or concession of that rejection, issue or comment. In addition, because the arguments made above may not be exhaustive, there may be reasons for patentability of any or all pending claims that have not been expressed. Finally, nothing in this paper should be construed as an intent to concede any issue with regard to any claim, except as specifically stated in this document.

Please apply any charges or credits to Deposit Account No. 50-4189, referencing Attorney Docket No. 70002-074001.

Respectfully submitted,

Date: _____

6/25/07



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Exhibit 1


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vi·nasse   [vi-**nas**] [Pronunciation Key](#) - [Show IPA](#)
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-noun *Distilling*.


the residuum in a still after distillation; slop.

[Origin: < F < Pr *vinassa* < L *vinācea*, fem. of *vināceus*
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American Heritage Dictionary – Cite This Sourcevi·nas·se  (vī-nās', vī-) Pronunciation Key

n. The residue left in a still after the process of distillation.

[French, from Provençal *vinassa*, from Latin *vinācea*, from feminine of *vināceus*; see **vinaceous**.]

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